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10/728,787	12/08/2003	Ho-Kyoon Chung	61610108US	2371

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H.C. PARK & ASSOCIATES, PLC
8500 LEESBURG PIKE
SUITE 7500
VIENNA, VA 22182

EXAMINER

ARANCIBIA, MAUREEN GRAMAGLIA

ART UNIT	PAPER NUMBER
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1763

MAIL DATE	DELIVERY MODE
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07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/728,787

Applicant(s)

CHUNG ET AL.

Examiner

Maureen G. Arancibia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,11 and 13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,5,6,11 and 13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/07.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, 4-6, 8, 11, and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,391,137 to Matsushima in view of U.S. Patent 5,766,493 to Shin and U.S. Patent 6,908,638 to Ueda et al.**

In regards to Claims 1, 5, 11, and 13, Matsushima teaches a prior art method of manufacturing a thin flat panel display (Figure 12), comprising: preparing an etchable upper substrate 2 and an etchable lower substrate 1; forming image display devices (Column 1, Lines 45-49) on an inner surface of the lower substrate, and isolating them within device divisions 6; combining the upper and lower substrates, such that the image display devices are each completely surrounded by an inner sealant 3 (made continuous by filling injection hole 3a; Column 1, Lines 50-54 and 64-67; Figure 12); etching the outer surfaces of the upper and lower substrates (Column 2, Lines 15-20); and cutting the combined upper and lower substrates into individual image display units (Column 3, Lines 1-5). Each of the image display devices are completely surrounded by an inner sealant 3, and all of the image display devices and the inner sealants are surrounded by an outer sealant 4. (Figure 12; Column 1, Lines 54-56)

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Matsushima does not expressly teach that the combining in the prior art method *further* comprises completely covering each lateral side of the combined upper and lower substrates with an unetchable protection film.

However, Matsushima teaches another method, wherein each lateral side of combined upper and lower substrates 100, 101 is completely covered with an unetchable protection film 203. (Column 8, Lines 45-50; Figures 3 and 4)

It would have been obvious to one of ordinary skill in the art to modify the prior art method taught by Matsushima to additionally completely cover each lateral side of the combined upper and lower substrates with an unetchable protection film. The motivation for doing so, as taught by Matsushima (Column 8, Lines 38-42), would have been to prevent the etchant from entering the gap between the upper and lower substrates during etching.

Further in regards to Claims 1 and 5, and in regards to Claims 4 and 8, Matsushima does not expressly teach that the upper and lower substrates are etched to each have a thickness of 100 microns or less.

Shin teaches that it is desirable to have the upper and lower glass substrates for forming a flat panel display be thin and light (Column 2, Lines 14-15 and 24-25; Column 4, Lines 64-67), and that the thickness to which the substrates are etched is determined by the etching time, which can be set as desired (*predetermined*) (Column 4, Lines 14-22)

It would have been obvious to one of ordinary skill in the art to modify the method taught by Matsushima, through routine experimentation, to optimize the etching time as

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a result-effective variable, and thereby to optimize the resultant upper and lower glass substrate thicknesses to be 100 microns or less, in order to obtain a flat panel display that is thin and light. (Shin, Column 4, Lines 14-22 and 64-67)

Further in regards to Claims 1 and 5, Matsushima does not expressly teach that each image display device is an organic EL display device.

Ueda et al. teaches that display devices can be organic EL display devices, formed by coating an organic luminescing layer 3. (Column 1, Lines 15-26; Column 2, Lines 10-15; Column 6, Lines 5-6)

It would have been obvious to one of ordinary skill in the art to further modify the method taught by Matsushima and Shin to have the individual display devices be organic EL display devices. The motivation for making such a modification, as taught by Ueda et al. (Column 18, Lines 27-37), would have been to employ display devices with a long service life. More broadly, it would have been obvious to substitute organic EL display devices for the LCD devices taught by Matsushima, since both are art-recognized equivalent means *of generating an electronic display*.

In regards to Claims 2 and 6, Matsushima teaches that the upper and lower substrates 1, 2, are formed of glass. (Column 1, Line 45)

Response to Arguments

3. Applicant's arguments filed 4 May 2007 have been fully considered but they are not persuasive.

In regards to Applicant's argument that Examiner assumes that the claimed substrate thickness of 100 microns or less provides an optimized substrate thickness,

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Examiner must disagree. The rejection set forth above is based on the teaching of Shin that the etching time is a *result-effective variable* that determines the thickness of the substrate, and thereby determines the degree of thinness and lightness of the substrate. (Column 2, Lines 14-15 and 24-25; Column 4, Lines 64-67) Examiner argues that it would have been obvious to one of ordinary skill in the art to modify the method taught by Matsushima, *through routine experimentation*, to optimize *the etching time* as a *result-effective variable*, and thereby to optimize the *resultant* upper and lower glass substrate thicknesses to be *within the range of* 100 microns or less, in order to obtain a flat panel display that is thin and light. (Shin, Column 4, Lines 14-22 and 64-67) It is well settled that determination of optimum values of result-effective variables is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980). The rejection does not assume that the claimed range is the optimal range in thickness, but rather asserts that it would be obvious to one of ordinary skill in the art, *through routine experimentation*, to obtain a substrate thickness within the claimed range. Similarly, in regards to Applicant's argument that one of ordinary skill in the art would not have a reasonable expectation of success in modifying Matsushima, Examiner responds that one of ordinary skill in the art would have a reasonable expectation of success in modifying Matsushima *through routine experimentation* based on Shin's teaching of the etching time as a result-effective variable that determines the substrate thickness and thus the thinness and lightness of the resultant substrate.

In regards to Applicant's several arguments that Matsushima teaches away from a substrate thickness of 100 microns or less by teaching a minimum substrate thickness

of about 300 microns, these arguments are not persuasive. That Matsushima teaches a particular minimum substrate thickness, even what Matsushima considers to be the *best* minimum substrate thickness, does not mean that Matsushima teaches *away* from having the minimum substrate thickness be less.

In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to Applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Finally, in response to Applicant's argument that the claimed range in substrate thickness of less than 100 microns has criticality in producing an unexpected result of flexible substrates, and citing page 8, Lines 13-14 of the Specification, this argument is not persuasive. While the claimed range in substrate thickness may indeed produce a *different* result in the properties of the substrate than a different range, it is not clear that

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this result is *unexpected*. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is also noted that the features upon which applicant relies (i.e., the flexibility of the finished substrates) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571)


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272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Maureen G. Arancibia
Patent Examiner
Art Unit 1763


Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763